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STATE OF CALIFORNIA
WATER RESOURCES CONTROL BOARD
DIVISION OF DRINKING WATER

TO: United States Forest Service – French Gulch Water System
Water System No. 1502686

Attn: Peter Landucci, Environmental Engineer
United States Forest Service (USFS)
1839 S. Newcomb Street
Porterville, CA 93257

CERTIFIED MAIL

**CITATION FOR VIOLATION OF CALIFORNIA CODE OF REGULATIONS,
TITLE 22, SECTION 64426.1(b)(2) - WATER SYSTEM NO. 1502686**

January 2016

C I T A T I O N N O. 03-19-16C-015

Issued on April 19, 2016

STATEMENT OF FACTS

United States Forest Service (USFS) – French Gulch Water System (hereinafter Water System) is classified as a transient non-community water system and mainly serves a transient population of approximately 46 persons through five service connections. The Water System has one active source of supply, Well 01 (Primary Station Code: 1502686-001), a 40,000-gallon storage tank (Tank No. 1), a 20,000-gallon tank (Tank No. 2), and distribution system. No treatment is provided to the well water. The Water System operates under the authority of Permit No. 03-19-13P-018, issued on

1 August 28, 2013, by the California Department of Public Health. Effective July 1,
2 2014, regulatory jurisdiction of the Water System was transferred to the State Water
3 Resources Control Board (hereinafter "State Board"), Division of Drinking Water.
4

5 Section 116650 of the California Health and Safety Code authorizes the issuance of a
6 citation to a public water system for violation of the California Safe Drinking Water
7 Act (Health and Safety Code, Division 104, Part 12, Chapter 4, commencing with
8 Section 116270) (hereinafter "California SDWA") or any regulation, standard, permit
9 or order issued or adopted thereunder.
10

11
12 The State Board, acting by and through its Division of Drinking Water and the Deputy
13 Director for the Division of Drinking Water hereby issues a citation to the USFS –
14 French Gulch Water System (mailing address: 1839 S. Newcomb Street, Porterville,
15 CA 93257) for violation of the California Code of Regulations (CCR), Title 22,
16 Section 64426, subsection (b)(2).
17

- 18
- 19 • The Water System is required to collect one (1) routine bacteriological sample
20 per month.
 - 21 • The Water System failed the total coliform MCL for the month of December
22 2015, and was required to collect five (5) routine samples in January 2016.
 - 23 • One (1) out of six (6) routine bacteriological quality samples collected on
24 January 7, 2016, from the distribution system showed the presence of total
25 coliform bacteria, when analyzed by the Most Probable Number (MPN)
26 method.
27

- One (1) bacteriological quality sample collected on January 7, 2016, from Well 01, also showed the presence of total coliform bacteria when analyzed by the MPN method. The well sample counts as a routine total coliform sample as well as a Ground Water Rule Sample for the month of January 2016.
- **USFS – French Gulch Water System failed the total coliform maximum contaminant level (MCL) for January 2016. [Section 64426.1(b)(2), *Authorities*].**
- On January 14, 2016, in a conference call held between the Water System and State Board staff, the Water System was directed to disinfect and flush Well 01.
- On January 21, 2016, a well cycle test was conducted after disinfecting and flushing of the well, and five (5) bacteriological quality samples were collected at start-up, 1-minute, 5-minute, 15-minute and 30-minute intervals. One sample (collected at the 5-minute mark) tested positive for total coliform bacteria with a result of 20.7 MPN/100 mL.
- On January 25, 2016, the Water System was directed by the State Board, via email, to collect seven (7) special samples before end of January 2016: one (1) from Well 01, one (1) from the storage tank, and five (5) from the distribution system.
- Seven (7) investigative samples were collected on January 28, 2016, and one (1) of these samples was collected from Well 01, again tested positive for total coliform bacteria, with a result of 3.1 MPN/100 mL. The remaining six (6) samples tested negative for total coliform bacteria.

- On February 16, 2016, Osiel Jaime from the State Board inspected the Water System. Recommendations, made following the inspection, were discussed in an email (dated February 16, 2016) to the Water system (**Attachment B**).
- On February 22, 2016, a well cycle test was conducted after disinfecting and flushing of the well, and five (5) bacteriological quality samples were collected at start-up, 1-minute, 5-minute, 15-minute and 30-minute intervals. Three (3) samples (collected at the first draw, 1-minute, and 5-minute marks) tested positive for total coliform bacteria with results ranging from 9.9 – 144.5 MPN/100 mL.
- The State Board directed the Water System by email (dated February 23, 2016) to disinfect and flush the well and collect five (5) routine bacteriological quality samples for the month of February 2016.
- On February 26, 2016, five (5) routine bacteriological quality samples were collected from the distribution system. All five (5) samples tested negative for total coliform bacteria.
- None of the total coliform positive samples collected in January or February 2016, tested positive for *E.coli* bacteria.
- On February 4, 2016, public notice and *Certification of Completion of Notification* forms were emailed to the Water System, for the January 2016 total coliform MCL failure.
- On March 11, 2016, the State Board received signed and dated copies of the public notice and the *Certification of Completion of Public Notification* from

the Water System. According to these documents, public notification was completed on February 5, 2016.

- On February 4, 2016, an investigation report template was emailed to the Water System, for the January 2016 total coliform MCL failure.
- On March 11, 2016, the State Board received a completed investigation report, in response to the January 2016 total coliform MCL failure. The investigation report was completed by Peter Landucci. The investigation report did not identify the exact cause of bacteriological, but referred to the State Board inspection, conducted on February 16, 2016. The report also stated that recommendations made by the State Board were completed.
- As of writing of this citation, the Water System also failed the total coliform MCL for the month of March 2016, due to one routine and repeat total coliform positive samples. The State Board will issue a separate citation for the total coliform MCL violation for March 2016.
- Results of all bacteriological samples collected from January 2015 to April 2016, are summarized in **Attachment A**.
- It is noted that the Water System also failed the total coliform MCL in November and December 2015. Due to ongoing total coliform MCL violations, the State Board is going to require installation of mandatory continuous chlorination treatment at Well 01.

AUTHORITIES

Section 116577 of the CHSC, states in relevant part:

“(a) Each public water system shall reimburse the State Board for the actual costs incurred by the State Board for any of the following enforcement activities related to that water system:

- (1) Preparing, issuing, and monitoring compliance with, an order or citation.
- (2) Preparing, and issuing public notification

...
 (b) The State Board shall submit an invoice for these enforcement costs to the public water system that requires payment prior to September 1 of the fiscal year following the fiscal year in which the costs were incurred. The invoice shall indicate the total hours expended, the reasons for the expenditure, and the hourly cost rate of the State Board. The costs set forth in the invoice shall not exceed the total actual costs to the State Board of the enforcement activities specified in this section.”...

Section 116650 of the CHSC, states in relevant part:

“(a) If the State Board determines that a public water system is in violation of this chapter or any regulation, permit, standard, citation, or order issued or adopted thereunder, the State Board may issue a citation to the public water system. The citation shall be served upon the public water system personally or by certified mail. Service shall be deemed effective as of the date of personal service or the date of receipt of the certified mail. If a person to whom a citation is directed refuses to accept delivery of the certified mail, the date of service shall be deemed to be the date of mailing.

(b) Each citation shall be in writing and shall describe the nature of the violation or violations, including a reference to the statutory provision, standard, order, citation, permit, or regulation alleged to have been violated.

(c) A citation may specify a date for elimination or correction of the condition constituting the violation.

(d) A citation may include the assessment of a penalty as specified in subdivision (e).

(e) The department may assess a penalty in an amount not to exceed one thousand dollars (\$1,000) per day for each day that a violation occurred, and for each day that a violation continues to occur. A separate penalty may be assessed for each violation.”

Section 116655 of the CHSC, states in relevant part:

“(a) Whenever the State Board determines that any person has violated or is violating this chapter, or any permit, regulation, or standard issued or adopted pursuant to this chapter, the director may issue an order doing any of the following:

(1) Directing compliance forthwith.

(2) Directing compliance in accordance with a time schedule set by the State Board.

(3) Directing that appropriate preventive action be taken in the case of a threatened violation.

(b) An order issued pursuant to this section may include, but shall not be limited to, any or all of the following requirements:

(1) That the existing plant, works, or system be repaired, altered, or added to.

(2) That purification or treatment works be installed.

(3) That the source of the water supply be changed.

(4) That no additional service connection be made to the system.

(5) That the water supply, the plant, or the system be monitored.

(6) That a report on the condition and operation of the plant, works, system, or water supply be submitted to the State Board.”

California Code of Regulations (hereinafter, CCR), Title 22, Section 64423, Table 64423-A establishes the minimum routine sampling requirements, and states in relevant part:

<i>Monthly Population Served</i>	<i>Service Connections</i>	<i>Minimum Number of Samples</i>
25 to 1000	15 to 400	1 per month
1,001 to 2,500	401 to 890	2 per month
2,501 to 3,300	891 to 1,180	3 per month
3,301 to 4,100	1,181 to 1,460	4 per month
4,101 to 4,900	1,461 to 1,750	5 per month
4,901 to 5,800	1,751 to 2,100	6 per month
5,801 to 6,700	2,101 to 2,400	7 per month
6,701 to 7,600	2,401 to 2,700	2 per week
7,601 to 12,900	2,701 to 4,600	3 per week
12,901 to 17,200	4,601 to 6,100	4 per week
17,201 to 21,500	6,101 to 7,700	5 per week

<i>Monthly Population Served</i>	<i>Service Connections</i>	<i>Minimum Number of Samples</i>
21,501 to 25,000	7,701 to 8,900	6 per week
25,001 to 33,000	8,901 to 11,800	8 per week
33,001 to 41,000	11,801 to 14,600	10 per week
41,001 to 50,000	14,601 to 17,900	12 per week
50,001 to 59,000	17,901 to 21,100	15 per week

CCR, Title 22, Section 64424 establishes the repeat sampling requirements, and states in relevant part:

"(a) If a routine sample is total coliform-positive, the water supplier shall collect a repeat sample set as described in paragraph (a)(1) within 24 hours of being notified of the positive result. The repeat samples shall all be collected within the same 24 hour time period. A single service connection system may request that the State Board allow the collection of the repeat sample set over a four-day period.

(1) For a water supplier that normally collects more than one routine sample a month, a repeat sample set shall be at least three samples for each total coliform-positive sample. For a water supplier that normally collects one or fewer samples per month, a repeat sample set shall be at least four samples for each total coliform-positive sample.

(2) If the water supplier is unable to collect the samples within the 24-hour time period specified in subsection (a) or deliver the samples to the laboratory within the 24 hours after collection because of circumstances beyond its control, the water supplier shall notify the State Board within 24 hours. The State Board will then determine how much time the supplier will have to collect the repeat samples.

(b) When collecting the repeat sample set, the water supplier shall collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken. Other repeat samples shall be collected within five service connections upstream or downstream unless there is no upstream and/or downstream service connection.

(c) If one or more samples in the repeat sample set is total-coliform positive, the water supplier shall collect and have analyzed an additional set of repeat samples as specified in subsections (a) and (b). The supplier shall repeat this process until either no coliforms are detected in one complete repeat sample set or the supplier determines that the MCL for total coliforms specified in 64426.1 has been exceeded and notifies the State Board."

CCR, Title 22, Section 64426.1 establishes the total coliform maximum contaminant level and states in relevant part:

"(a) Results of all samples collected in a calendar month pursuant to Sections 64423, 64424, and 64425 that are not invalidated by the State Board or the laboratory shall be included in determining compliance with the total coliform MCL. Special purpose samples such as those listed in 64421(b) and samples collected by the water supplier during special investigations shall not be used to determine compliance with the total coliform MCL.

(b) A public water system is in violation of the total coliform MCL when any of the following occurs:

- (1) For a public water system which collects at least 40 samples per month, more than 5.0 percent of the samples collected during any month are total coliform-positive; or
- (2) For a public water system with collects fewer than 40 samples per month, more than one sample collected during any month is total coliform-positive; or
- (3) Any repeat sample is fecal coliform-positive or E. coli-positive; or
- (4) Any repeat sample following a fecal coliform-positive or E. coli-positive routine sample is total coliform-positive.

DETERMINATIONS

Based upon the above Statement of Facts and Authorities, the State Board determines that the USFS – French Gulch Water System has violated the following:

- 1 1. CCR, Title 22, Section 64426.1(b)(2); Specifically, the Water System violated
2 the total coliform MCL for the month of January 2016, when more than one
3 sample during the month tested positive for total coliform bacteria.

4 The above violation is classified as a non-continuing violation.
5

6 DIRECTIVES

7 USFS – French Gulch Water System is hereby directed to take the following actions:
8

- 9 1. Cease and desist from failing to comply with Section 116555(a) of the
10 California Health and Safety Code (CHSC) and Section 64426(b)(2), of Title
11 22, California Code of Regulations.
12
- 13 2. By **April 30, 2016**, the Water System shall submit a permit amendment
14 application to the State Board to allow the continuous chlorination of the water
15 supply. A completed permit amendment application (copy provided as
16 **Attachment C**) shall be used to make application and continuous chlorination
17 equipment shall be installed on the discharge of the Water System's Well 01.
18 A permit application fee of \$250.00 (payable in the form of a check) shall also
19 be submitted to the State Board. Information regarding the permanent
20 chlorination equipment and installation procedures shall be submitted to the
21 State Board. A copy of the Operational Guidelines for Hypo-Chlorination
22 Systems is being provided as **Attachment D**. A blank Chlorination Data Sheet
23 is provided as **Attachment E**, and shall be completed and returned to the State
24 Board at the time of submittal of the permit amendment application. The
25 installation of chlorination treatment shall be conducted by a person qualified
26 and experienced with chlorination equipment. A detectable chlorine residual
27 shall be maintained in all areas of the distribution system at all times. The

1 chlorine residual shall be measured at the time and location of the collection of
2 the monthly distribution system bacteriological samples and all other samples
3 collected downstream of the chlorine injection point and reported to the State
4 Board on the laboratory analysis reports.

5
6 3. The Water System shall utilize either Certified Distribution Operators or
7 Treatment Operators to operate the chlorination equipment. The operator(s)
8 shall visit and review the chlorination treatment on at least a weekly basis and
9 document the date and time of the visit, the settings on the chemical feed
10 equipment, the chlorine stock on hand and the chlorine residual in the
11 distribution system. The State Board recommends daily inspection of the
12 chlorination equipment. Records of documentation of the site visits and
13 chlorination treatment shall be maintained and made available to the State
14 Board when requested.

15 4. The Water System shall initiate monthly sampling of the raw well water for
16 coliform bacteria and results shall be reported as MPN/100 mL. The raw water
17 sample must be collected at a location ahead of chlorination. The results of all
18 samples shall be submitted to the State Board by the 10th day of the following
19 month.

20
21 5. Any document requested by the citation shall be submitted to the following
22 address and/or fax number:

23 Jaswinder S. Dhaliwal, P.E., Senior Sanitary Engineer
24 State Water Resources Control Board
25 4925 Commerce Drive, Suite 120
26 Bakersfield, CA 93309
27 Fax: (661) 335-7316

1 6. The Water System shall reimburse the State Board, in accordance with an
2 invoice that shall be provided to the Water System, the costs for enforcement
3 activities, and such reimbursement shall be made prior to September 1 (or by a
4 different date if specified by the State Board) of the fiscal year following the
5 fiscal year in which such costs are incurred as described in CHSC Sections
6 116577(a)(1-2) and 116577(b).

7 **FURTHER ENFORCEMENT ACTIONS**

8 Section 116270, Chapter 4, Part 12, Division 104 of the CHSC authorizes the State
9 Board to: issue additional citations with assessment of penalties if a public water
10 system continues to fail or correct a violation identified in a citation; take action to
11 suspend or revoke a permit that has been issued to a public water system if the system
12 has violated applicable law or regulations or has failed to comply with orders of the
13 State Board; and petition the superior court to take various enforcement measures
14 against a public water system that has failed to comply with orders of the State Board.
15 The State Board does not waive any further enforcement action by issuance of this
16 citation.

17 **PARTIES BOUND**

18 This citation shall apply to and be binding upon USFS – French Gulch Water System,
19 its officers, directors, agents, employees, contractors, successors, and assignees.
20

21 **SEVERABILITY**

22 The directives of this citation are severable, and USFS – French Gulch Water System
23 shall comply with each and every provision thereof, notwithstanding the effectiveness
24 of any other provision.
25
26
27

CIVIL PENALTIES

Section 116650, subsections (d) and (e) of the CHSC allow for the assessment of a civil penalty for failure to comply with the requirements of the Safe Drinking Water Act. Failure to comply with any provision of this Citation may result in the State Board imposing an administrative penalty in an amount not to exceed \$1000 (one thousand dollars) per day as of the date of violation of any provision of this Citation.

April 19, 2016
Date

Jaswinder S. Dhaliwal
Jaswinder S. Dhaliwal, P.E.
Senior Sanitary Engineer
Drinking Water Field Operations Branch

Certified Mail No. 7015 1520 0000 4433 1860

ATTACHMENT

Attachment A: Summary of Bacteriological Samples Collected from January 2015 – April 2016
Attachment B: Recommendations made following February 16, 2016 State Board Inspection
Attachment C: Permit Amendment Application Form
Attachment D: Operational Guidelines for Hypo-Chlorination Systems
Attachment E: Blank Chlorination Data Sheet

CC: Kern County Environmental Health Services Department (w/o attachments)
Cranmer Engineering, Inc., Contract Sampler (via email)

JSD/dc

Attachment A

USFS French Gulch Campground Water System

1502686

Distribution System Freq: 1/M

Sample Date	Time	Location	T Coli	E Coli	F Coli	Type	Cl2	Violation	Comment
1/7/2015	12:55	1ROU	A	A		Routine			
2/4/2015	12:52	1ROU	A	A		Routine			
3/4/2015	12:37	1ROU	A	A		Routine			
5/5/2015		1ROU	A	A		Routine			
8/13/2015	10:38	1ROU	A	A		Routine			
9/16/2015	15:31	3ROU	A	A		Routine			
10/8/2015	12:20	Hose Bib Near Gr	A	A		Routine			
11/5/2015	9:35	Rou 1 - Hose Bib	3.1	A		Routine		MCL	Citation #03-19-16C-009 issued
11/10/2015	12:40	3 Rep 1 R5	A	A		Repeat			
11/10/2015	12:45	1 Rep2 2Rep1	A	A		Repeat			
11/10/2015	12:55	5 Rep 1 RR	A	A		Repeat			
11/13/2015	11:46	5Rep 1 RR	A	A		Repeat			
11/13/2015	11:52	2 REP 1 Hose Bib	A	A		Repeat			
11/13/2015	12:54	3 Rep 2 Hose Bibb	A	A		Repeat			
12/3/2015	10:20	R-1 Hosebib Near	23.8	A		Routine			
12/3/2015	10:30	R2	17.8	A		Routine			
12/3/2015	10:35	R3	13.7	A		Routine			
12/3/2015	10:40	R4	2.0	A		Routine		MCL	Citation # 03-19-16C-009 issued
12/3/2015	10:45	R5	6.4	A		Routine			
12/18/2015	8:40	Storage Tank	22.2	A		Repeat			
12/18/2015	8:55	4 Rep 1	1.0	A		Repeat			
12/18/2015	9:05	2 Rep 1 Hosebib	1.0	A		Repeat			
12/18/2015	9:10	3 Rep 1 R5	1.0	A		Repeat			
12/18/2015	9:15	3 Rep 2 Hosebib	1.0	A		Repeat			
12/18/2015	9:25	4 Rep 2	1.0	A		Repeat			
1/7/2016	10:45	4 Rep 1	A	A		Routine			
1/7/2016	10:50	4 Rep 2	2.0	A		Routine		MCL	Citation 03-19-16C-015 issued
1/7/2016	10:55	2 Rep 1 Hosebib	A	A		Routine			
1/7/2016	11:00	3 Rep 1	A	A		Routine			
1/7/2016	11:05	3 Rep 2 Hosebib	A	A		Routine			
1/7/2016	11:10	2 Rep 2 Hosebib	A	A		Routine			
1/28/2016	9:00	Storage Tank	A	A		Repeat			
1/28/2016	9:15	2 REP 1 Hosebib	A	A		Repeat			
1/28/2016	9:25	3 REP 1 R5	A	A		Repeat			
1/28/2016	9:30	4 REP 1	A	A		Repeat			

<i>Sample Date</i>	<i>Time</i>	<i>Location</i>	<i>T Coli</i>	<i>E Coli</i>	<i>F Coli</i>	<i>Type</i>	<i>Cl2</i>	<i>Violation</i>	<i>Comment</i>
1/28/2016	9:35	4 REP 2	A	A		Repeat			
1/28/2016	9:45	3 REP 2 Hosebib	A	A		Repeat			
2/26/2016	12:15	R4	A	A		Routine			
2/26/2016	12:20	R5	A	A		Routine			
2/26/2016	12:35	R1 Hosebib Near	A	A		Routine			
2/26/2016	12:40	R2	A	A		Routine			
2/26/2016	12:45	R3	A	A		Routine			
3/30/2016	8:50	R1 Hosebib Near	2.0	A		Routine			
4/7/2016	8:55	2 Rep 1 Hose bib	1.0	A		Repeat		MCL	Citation pending
4/7/2016	9:00	3 Rep2 Hose bib	2.0	A		Repeat			
4/7/2016	9:05	4 Rep 1	A	A		Repeat			
4/7/2016	9:10	2 REP 2 Hose bib	A	A		Repeat			
4/7/2016	9:15	5 Rep 1 RR	1.0	A		Repeat			

USFS French Gulch Campground Water System

1502686

Source Monitoring Freq:

<i>Sample Date</i>	<i>Time</i>	<i>Source</i>	<i>T Coli</i>	<i>E Coli</i>	<i>F Coli</i>	<i>Violation</i>	<i>Comment</i>
11/10/2015	20:32	Well	1.0	A			GWR and TCR Repea
11/13/2015	12:50	Well	A	A			
12/18/2015	8:30	Well	5.3	A			
1/7/2016	10:35	Well	1.0	A		MCL	
1/21/2016	16:00	Cycle Test Well 1st Draw	A	A			
1/21/2016	16:01	Source	A	A			
1/21/2016	16:05	Cycle Test Well 5 Minute	20.7	A			
1/21/2016	16:15	Cycle Test Well 15 Minute	A	A			
1/21/2016	16:30	Cycle Test Well 30 Minute	A	A			
1/28/2016	9:50	Well	3.1	A			
2/22/2016	11:15	Cycle Test Well 1st Draw	9.9	A			
2/22/2016	11:16	Cycle Test Well 1 Minute	144.5	A			
2/22/2016	11:20	Cycle Test Well 5 Minute	56	A			
2/22/2016	11:30	Cycle Test Well 15 Minute	A	A			
2/22/2016	11:45	Cycle Test Well 30 Minute	A	A			
4/7/2016	8:40	WELL	4.2	A		MCL	GWR and TCR Repea

Attachment B

Carlton, Dawn@Waterboards

From: Jaime, Osiel@Waterboards
Sent: Tuesday, February 16, 2016 4:02 PM
To: planducci@fs.fed.us
Cc: Dhaliwal, Jesse@Waterboards; Carlton, Dawn@Waterboards; bfrenes@fs.fed.us
Subject: USFS - French Gulch Water System (1502686) - 2/16/16 Inspection

Hello Peter,

Per our filed inspection today, below is a list of action items;

1. The opening on the electrical box located on the well head should be capped.
2. A fine mesh screen should be installed on the pressure relief valve that's located on the well head.
3. A fine mesh screen should be installed over the coarse screen of the air vent of the 40,000-gallon tank.
4. A fine mesh screen should be installed over the coarse screen of the overflow pipe outlet of the 40,000-gallon tank.
5. A fine mesh screen should be installed on the opening for the water level indicator of the 20,000-gallon tank.

Once you have completed the above mentioned items, the well should be disinfected and flushed. Afterwards, a bacteriological cycle test on the well should be performed. The results should be reported in MPN/100 mL.

Also, it appears that the water in the 20,000-gallon tank is stagnant and will not flow until the 40,000-gallon tank is empty. This may be due to the elevation difference between the two tanks. Please investigate and confirm if this is the case.

Thank You,

Osiel Jaime
Sanitary Engineer
SWRCB – Division of Drinking Water
(661) 335-7347

Attachment C

STATE OF CALIFORNIA
APPLICATION
FOR
DOMESTIC WATER SUPPLY PERMIT AMENDMENT
FROM

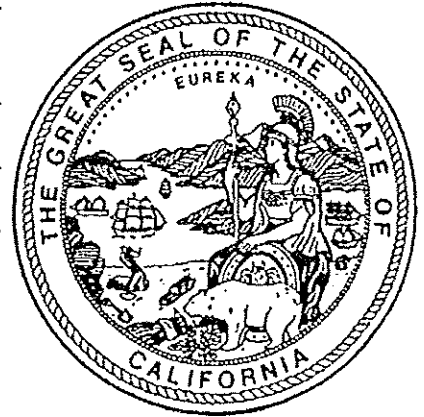
Applicant: _____
(Enter the name of legal owner, person(s) or organization)

Address: _____

System Name: _____

System Number: _____

TO: State Water Resources Control Board
Division of Drinking Water
Southern California Drinking Water Field Operations Branch
Tehachapi District Office
4925 Commerce Drive, Suite 120
Bakersfield, California, 93309



Pursuant and subject to the requirements of the California Health and Safety Code, Division 104, Part 12, Chapter 4 (California Safe Drinking Water Act), Article 7, Section 116550, relating to changes requiring an amended permit, application is hereby made to amend an existing water supply permit to _____

(Applicant must state specifically what is being applied for - whether to construct

new works, make alterations or additions in works or sources, or change or modify treatment.)

I (We) declare under penalty of perjury that the statements on this application and on the accompanying attachments are correct to my (our) knowledge and that I (we) are acting under authority and direction of the responsible legal entity under whose name this application is made.

By: _____

Title: _____

Address: _____

Telephone: _____

Dated: _____

DDW 07/2014

Attachment D

State of California
State Water Resources Control Board
Division of Drinking Water
Southern California Branch
Drinking Water Field Operations
Tehachapi District
July 2008 (Updated July 2014)

Operational Guidelines for Hypo-Chlorination Systems

This document summarizes basic operational requirements for chlorination systems serving public water systems. Compliance with these requirements will help ensure reliable and consistent chlorination. This document does not address:

- chlorination of surface water, which is subject to more stringent requirements.
- safety considerations, which are of obvious importance.
- design standards. The design of new chlorination systems is reviewed as part of the Division's water supply permit process. Problems with design of existing systems noted by the Division during inspections will be brought to the attention of the water supplier.

Applicability: These requirements are directed towards chlorination of groundwater sources (i.e., wells), which are not subject to significant bacteriological contamination. Wells, which show significant bacteriological contamination of the raw water, may be subject to additional reliability and treatment requirements.

The bacteriological quality of the source should be determined based on raw water bacteriological sampling. Ongoing sampling of the raw water source should be done to ensure that a significant problem is not being masked by the chlorination process.

Equipment

1. The equipment must be in good operating condition and adequate for the application.
2. The equipment must be properly housed.
3. The equipment must provide a consistent feed rate under all operating conditions.
4. The chlorinator must be activated by the circuit controlling the well pump or in response to a signal from the flow meter.
5. A source flow meter must be provided at the discharge header in order to calculate chemical dosages.
6. The chlorine solution storage crock must be designed for use in mixing and measuring chlorine solutions. It should be large enough to hold enough solution for one week of peak use plus a prudent reserve. The amount of chemical in the crock must be able to be accurately measured by taking readings marked on the container.
7. Monitoring for chlorine residuals must be done using the DPD method. For example, the Hach DR100 Colorimeter or equivalent may be used.

Chemical Additive Requirements

Effective January 1, 1994, all chemicals or products, including chlorine, added directly to the drinking water, as part of a treatment process must meet the ANSI/NSF Standard 60. The manufacturer or distributor of the chemical should be able to provide you with documentation of compliance with this requirement.

Monitoring of System

Inspecting and adjusting the equipment: Equipment should be inspected often enough to ensure prompt detection of problems. Daily inspection of the equipment is recommended. The required frequency of inspecting the equipment is set on a case-by-case basis depending on the system configuration, the consequences of an undetected failure and historical system reliability.

The inspection should consist of a visual inspection of the equipment, checking and filling the chlorine solution vessel, measuring the chlorine residual, adjusting the equipment, calculating the dosage rate and writing down the results of the inspection. Any problems noted must be corrected.

Monitoring the chlorine residual: The chlorine residual of the water must be measured and recorded on a regular basis. Daily measurement of the residual is generally required and is strongly recommended. The required frequency for measuring the residual is set on a case-by-case basis.

Responding to failures or interruptions: Each system must have a written procedure for responding to chlorination failures or interruptions. This procedure must include prompt correction of the problem and restoration of the chlorine residual. The availability of a replacement or back-up chemical feed system must be addressed.

Record Keeping: The minimum record keeping requirements are shown on the attached forms. These forms or their equivalent must be used to maintain the following minimum records:

1. Date and time of inspection, name of operator
2. Chlorine residual and location of residual measurement
3. Production records
4. Operational notes including weekly calculation of chemical dosage (see attached form)
5. Chlorination failure log
6. Maintenance performed (both preventative and unscheduled maintenance)

Operator Certification

Section 106885 of the California Health and Safety Code states that all persons responsible for the operation of water treatment plants shall possess a State Water Treatment/Distribution Operator's certificate of appropriate grade. Water treatment plants include chemical feed systems such as chlorinators. If the treatment facility is not required to provide Giardia or virus inactivation pursuant to Section 64654(a), a certified distribution operator is required. A certified water treatment operator may do the work related to the water treatment. For operation of a chlorination system for small water systems, the minimum certification requirement is a Grade 1 distribution operator's certificate. Generally, there are two ways to comply with the certification requirements:

1. The current system owner, operator or manager may obtain an operator's certificate.
2. The services of an outside certified operator could be obtained.

For well-operated chlorination systems using groundwater sources, a reasonable period of time can be provided for coming into full compliance with this requirement. For additional information, please contact the Tehachapi District Office at (661) 335-7315.

Attachments - Forms for calculating dosages, chlorination failure plan, and monitoring

State Water Resources Control Board
Division of Drinking Water

Calculating Chemical Dosages

The calculation of chemical dosages is important in order to track the effectiveness of the chemical feed process. To calculate the chemical dosage over a specific period of time, you need to know:

1. Quantity of water produced (gallons)
2. Amount of solution injected (gallons)
3. Percent of available chlorine in liquid hypochlorite (usually 5.25% or 12.5%)
4. Number of gallons of liquid hypochlorite used to make the solution.
5. Number of gallons of solution made with one gallon of the liquid hypochlorite. For example, if one gallon of liquid hypochlorite were added to 24 gallons of water, the final mixture would contain 25 gallons of solution.

The dosage is calculated by plugging these numbers into the following formula.

NOTE: "X" means multiply!

$$\text{Dosage} = \frac{10,000 \times (\text{Amount of solution injected}) \times (\text{Percent of available chlorine})}{(\text{Quantity of water produced}) \times (\text{Gallons of solution made with one gallon of hypochlorite})}$$

Example: Over a seven-day period, a system produced 40,000 gallons of water. During that time period, the system used 30 gallons of solution. When mixing up the solution, the operator mixes one gallon of chlorine with 24 gallons of water to make 25 gallons of solution. The strength of the liquid chlorine solution is 12.5 %. The following is a calculation of the dosage:

$$\text{Dosage} = \frac{10,000 \times (30) \times (12.5)}{(40,000) \times (25)} = 3.75 \text{ milligrams per liter (mg/L)}$$

Weekly Dosage Calculations

Week 1 - Date _____ Dosage = $\frac{10,000 \times (\quad) \times (\quad)}{(\quad) \times (\quad)} =$

Week 2 - Date _____ Dosage = $\frac{10,000 \times (\quad) \times (\quad)}{(\quad) \times (\quad)} =$

Week 3 - Date _____ Dosage = $\frac{10,000 \times (\quad) \times (\quad)}{(\quad) \times (\quad)} =$

Week 4 - Date _____ Dosage = $\frac{10,000 \times (\quad) \times (\quad)}{(\quad) \times (\quad)} =$

**State Water Resources Control Board
Division of Drinking Water**

Response to Failures and Interruptions for Chlorination Systems

Name of System: _____ System Number: _____

In the event the chlorination system is found to be not operating or injecting too little chlorine solution, the following plan of action will be taken to correct the problem or situation. The plan should address the availability of a spare chlorinator, manual feeding of chlorine until the problem is resolved, more frequent chlorine residual monitoring, etc.:

Short-term chlorinator interruption (i.e. less than one day):

Long-term chlorine interruption (i.e. chlorinator cannot be repaired):

Prepared by: _____ Date: _____

Notes: This plan is to be posted at the chlorination station.
This plan is to be reviewed and updated annually.

State Water Resources Control Board
Southern California Branch
Drinking Water Field Operations
Chlorination Operational Log

Month and Year _____

System Name _____ Facility Name _____

Maximum Capacity of the Chlorination Pump _____

Were there any malfunctions of the chlorination system this month? Yes _____ No _____

If yes, list the date the malfunction occurred and action taken. Problems that cannot be promptly corrected must be reported to the Division. Bacteriological sampling must be conducted if the safety of the water is in question:

Date	Time	Operator	Chlorine Rate		Crock Level	Meter Reading	Chlorine Residual		Operational Notes
			Speed	Stroke			Injection Pt.	Distribution	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
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28									
29									
30									
31									

1. Operational notes include weekly dosage calculations, addition of solution, changes in feed rate and other pertinent info.
2. This form is to be maintained for each chlorination facility.
3. This form is to be kept on file for review by the Division.

Chlorine Residual Report

System Name: _____ Month: _____
System Number: _____ Year: _____

Day	Sampling Address	Residual
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
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Attachment E

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD
DIVISION OF DRINKING WATER

CHLORINATION DATA

System Name: _____ System No.: _____
Source of Information: _____
Collected by: _____ Date: _____

Reason for chlorination (emergency, mandatory or optional):	
Water Source:	
Water treated (raw/filtered etc.):	
Chlorine demand character:	
Dosage:	
Point of application:	
Mixing:	
Contact time before use:	
Contact time for residual test:	
Water Flow: Variation:	
How measured:	
Equipment: Type:	
Make:	
Model:	
Capacity:	
Condition:	
Automatic switchover capability?	
Portable emergency chlorinator available?	
Chlorine residual monitored continuously?	
Low level residual alarm?	
At what level of chlorine residual is the alarm activated?	
How often are residual analyses conducted?	
Type of residual measured (free or combined):	
Type of residual test used:	
Chemical added: (% available chlorine, form):	
Cylinder or crock capacity:	
Stock on hand/days supply:	
Housing and Safety Features: Housing:	
Insulation:	
Heating:	
Locks:	
Lighting:	
Ventilation:	
Leak detector with alarm:	
Switches outside chlorination room:	
Gas mask:	
Is an emergency plan of action posted?	
Operation and maintenance: Lapse during changes:	
Ability to make repairs:	
How often is the equipment inspected?	
Operations records kept:	
Condition of scales:	
Remarks and deficiencies:	